

81233

S/020/60/132/03/34/066
B011/B008

5.3630

AUTHORS: Lutsenko, I. F., Krayts, Z. S.

TITLE: Arbuzov's Regrouping of the Vinyl Esters of Phosphorous
and Phenylphosphinic Acids 7

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 3,
pp. 612-614

TEXT: The authors state that the vinyl esters of the phosphorous acid can, as expected, be isomerized only very difficultly to vinyl esters of the phosphinic acids, as compared with the trialkyl phosphites. A 4 to 6-hour heating with methyl iodide was necessary for the isomerization of the various dialkyl vinyl phosphites produced by the authors. The same process takes 20 hours at 100°C when using ethyl- and butyl iodide and is concluded to less than 50%. The reaction had therefore to be carried out in soldered tubes at 120-150°C for 8 hours. In this way the authors obtained the following alkylvinyl esters of the phosphinic acids (Table 1): ethylvinyl ester of the methylphosphinic acid, butylvinyl ester of the butylphosphinic acid, divinyl ester of the methylphosphinic acid, di-iso-

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Arbuzov's Regrouping of the Vinyl Esters
of Phosphorous and Phenylphosphinic Acids

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propenyl ester of the ethylphosphinic acid, ethylvinyl ester of the acethylphosphinic acid, divinyl ester of the benzoylphosphinic acid, and divinyl ester of the phenylphosphinic acid. Furthermore, the addition product of the methyl iodide to the divinyl ester of the last mentioned acid was produced. Alkyldivinyl phosphites are isomerized to divinyl esters of the alkylphosphinic acids only under sharper conditions. Divinyl ester of the ethyl-, propyl- and butylphosphinic acids were obtained by heating of alkyldivinyl phosphites in soldered tubes at 130-160°C (for 8 hours) with alkyl iodide which contains the same radical as the phosphite. When the radical of the halogen-alkyl was a different one, a mixture of the phosphinic-acids-esters developed. Trivinyl phosphite is not isomerized with methyl iodide. Resinification takes place in the soldered tube at 120-125°C. Arbuzov's regrouping thus takes its course in the case of the monovinyl- and divinyl phosphites under splitting off of the alkyl radical. The vinyl radical, however, was split off in no case. Based on these data it could be expected that Arbuzov's regrouping of the divinyl ester of phenylphosphinic acid will also be impeded. A crystalline addition product develops from the

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Arbuzov's Regrouping of the Vinyl Esters
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reaction of this ester with methyl iodide. Iodine is precipitated at the heating of this addition product and resinification sets in. Slight heating occurs when dialkylvinyl phosphite and acyl halides are mixed. The reaction is terminated at room temperature within 48 hours. Vinyl esters and α -ketophosphinic acids were produced by distilling off (Table 1). Still sharper conditions are necessary for the reaction of the alkyldivinyl phosphites with acyl halides (benzoyl chloride with butyldivinyl phosphite, for example). There are 1 table and 2 Soviet references. ✓

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V.
Lomonosova (Moscow State University imeni M. V. Lomonosov)

PRESENTED: January 7, 1960, by A. N. Nesmeyanov, Academician

SUBMITTED: January 6, 1960

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S/020/60/132/04/30/064
B011/B003

5.3630

AUTHORS: Lutsenko, I. F., Kirilov, M.TITLE: Phosphorylated Chlorovinylketones. Primary Products of the
Reaction of Phosphorus Pentoxide With EnolacetatesPERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 4,
pp. 842-845

TEXT: In a previous paper (Ref. 1) the authors described the production of phosphorylated β -chlorovinylketones by the reaction of phosphorus pentachloride with enolacetates. In the present paper they continued to study this reaction and ascertained conditions under which this reaction can be stopped in the primary stage, i.e., in the stage of addition of phosphorus pentachloride to the double bond of the unsaturated ester. 2 moles of PCl_5 are used for one mole of ester (I). The composition of the addition product was proven by the example of the analysis of vinylacetate. Since the products indicated are easily hydrolyzed by atmospheric moisture, and are unstable at room temperature,

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Primary Products of the Reaction of
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they were further treated with sulfur dioxide at low temperature, thus avoiding that they be isolated. Thus, acid chlorides of β -acetoxy- β -chloroalkylphosphinic acids were formed. They were sufficiently resistant for isolation in pure state (II). The yields of acid chlorides of the β -acetoxy- β -chloroethyl- and of the β -acetoxy- β -chloropropylphosphinic acids were 85 and 70 per cent, respectively. At a ratio of enolacetate : PCl_5 = 1 : 1 the yield of the acid chloride does not exceed 40% in both cases. This is another indirect proof that the product added to the vinyl acetate and, apparently, also to the isopropenylacetate possesses a structure as shown in (I). The two latter reactions are to be performed at different temperatures: the former at $7-8^\circ$, the latter at -25° , since the addition products have a different stability. A similar difference in resistance is shown by the acid chlorides (III) obtained from addition products. The corresponding diethyl ester was obtained by the action of alcohol on the acid chloride of the β -acetoxy- β -chloroethylphosphinic acid in the presence of pyridine. By way of hydrolysis, this ester yields

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phosphonic acetaldehyde by the action of water and by heating within several hours, or within 3 - 4 days at room temperature. The authors failed to obtain the diethylester of β -acetoxy- β -chloropropylphosphinic acid in the presence or absence of pyridine. In both cases only phosphonic acetone could be obtained. The same process takes place by the action of alcohol on the acid chloride of acetonyl-phosphinic acid in the presence of pyridine. The above reactions substantiate the indicated structure of the carbon radical of the addition products. They further prove that addition occurs in accordance with Markovnikov's law. There are 2 tables and 2 Soviet references.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V.
Lomonosova (Moscow State University imeni M. V.
Lomonosov)

PRESENTED: January 7, 1960, by A. N. Nesmeyanov, Academician

SUBMITTED: January 6, 1960

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S/020/60/135/004/024/037
BO 16/B066

AUTHORS: Lutsenko, I. F., and Krayts, Z. S.

TITLE: Phosphoric and Phosphinic Esters of Enols

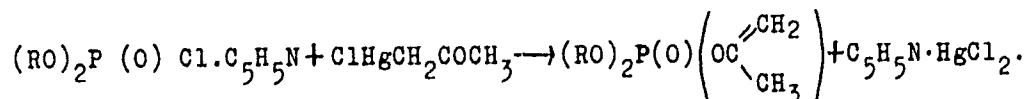
PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 135, No. 4, pp. 860-863

TEXT: In addition of their papers (Ref. 1) the authors studied the effect of acid chlorides of phosphoric and phosphinic acid upon α -mercurized aldehydes and ketones. They found that the acid chlorides of phosphoric acid do not react with organomercury compounds in ethereal or benzenic medium contrary to the chlorides of acids of trivalent phosphorus. They proved, on the other hand, that salts (NaI, KCl and others) readily split the metal - carbon bond in the mercurized aldehydes and ketones (Ref. 2). The authors used this variant in the case of acid chlorides of phosphoric and phosphinic acid. The salt obtained by dissolving these acid chlorides in pyridine reacts easily, already in the cold, not only with mercury bisacetaldehyde, but also with the organomercury salts of ketones. The ester of phosphoric or phosphinic acid with the enol form of the carbonyl compound is formed in this connection

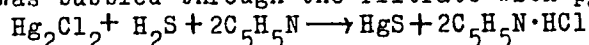
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Phosphoric and Phosphinic Esters of Enols

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B016/B066



This reaction obtained by the authors permits the formation of phosphoric acid esters with one, with two, and with three unsaturated groups, and of phosphinic acid esters both with one and with two of these groups in a yield of 50 - 85 %. The authors carried out this reaction with α -mercurized derivatives of the following compounds: acetaldehyde, acetone, diethyl ketone, cyclopentanone, cyclohexanone. Further with the following halogen phosphorus compounds: methyl-, ethyl-, and butyl-dichlorophosphates, diethyl- and dibutyl chlorophosphates, the acid chloride of ethyl phosphinic acid and of ethoxy-ethyl phosphinic acid, and phosphorus oxychloride. It is difficult to isolate the enol esters from the reaction mixture in the presence of the mercury salts, since the latter cause polymerization and resinification. The authors removed these salts in the following manner: the principal amount of the mercury salt which was precipitated after termination of the reaction as a pyridine complex, was filtered off. Hydrogen sulfide was bubbled through the filtrate with pyridine excess:



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Mercuric sulfide and pyridine hydrochloride were filtered, the filtrate was decomposed by distillation. Table 1 gives yields and constants of the resultant enol esters. There are 1 table and 3 Soviet references.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

PRESENTED: June 23, 1960, by A. N. Nesmeyanov, Academician

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Соединение 1	Выход, % 2	Т-ра вып., °C/мм 3
$(C_2H_5O)_2P(O)(OC\begin{array}{c} CH_3 \\ \diagup \diagdown \\ CH_2 \end{array})_2$	57	77,5—78°/3
$(C_2H_5O)_2P(O)(OC\begin{array}{c} CH_3 \\ \diagup \diagdown \\ CH_2 \end{array})_2$	53	115—116°/3
$(C_2H_5O)_2P(O)(OC\begin{array}{c} CH_3 \\ \diagup \diagdown \\ CH_2 \end{array})_2$	84	90—91°/2
$(C_2H_5O)_2P(O)(OC\begin{array}{c} CH_3 \\ \diagup \diagdown \\ CH_2 \end{array})_2$	85	116—117°/2
$C_2H_5P(O)(OC\begin{array}{c} CH_3 \\ \diagup \diagdown \\ CH_2 \end{array})_2$	77	67—67,5°/3
$(CH_3O)_2P(O)(OC\begin{array}{c} CH_3 \\ \diagup \diagdown \\ CH_2 \end{array})_2$	39	79—80°/3
$(C_2H_5O)_2P(O)(OC\begin{array}{c} CH_3 \\ \diagup \diagdown \\ CH_2 \end{array})_2$	51	94,5—95°/2
$(CH_3O)_2P(O)(OC\begin{array}{c} CH_3 \\ \diagup \diagdown \\ CH_2 \end{array})_2$	50	106—107°/2
$(C_2H_5O)_2P(O)(OC\begin{array}{c} CH_3 \\ \diagup \diagdown \\ CH_2 \end{array})_2$	74	139—140°/2
$C_2H_5P(O)(OC\begin{array}{c} CH_3 \\ \diagup \diagdown \\ CH_2 \end{array})_2$	64	71,5—72°/3
$C_2H_5P(O)(OC\begin{array}{c} CH_3 \\ \diagup \diagdown \\ CH_2 \end{array})_2$	70	131—132°/2
$OP(OC\begin{array}{c} CH_3 \\ \diagup \diagdown \\ CH_2 \end{array})_2$	51	80—80,5°/2,5
$OP(OC\begin{array}{c} CH_3 \\ \diagup \diagdown \\ CH_2 \end{array})_2$	76	125,5—126°/2
$OP(OCH_2CH_3)_2$	86	58—58,5°/4

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NRD	NRD	
	NRD	NRD
1,4198	1,0715	45,84
1,4300	1,0056	64,29
1,4298	1,0428	55,02
1,4321	1,1029	57,30
1,4318	1,0349	44,64
1,4331	1,1011	45,37
1,4353	1,0355	59,08
1,4488	1,0449	63,70
1,4763	1,1406	63,90
1,4455	1,0394	48,75
1,4892	1,1138	62,80
1,4428	1,0720	53,95
1,4588	1,0107	81,75
1,4289	1,1209	40,50

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Набдено. % 6				Вывисно. % 7			
C	H	P	C	C	H	P	P
43,45	7,88	15,77	43,30	7,78	15,96	15,96	
52,51	9,18	12,10	52,78	9,26	12,38	12,38	
48,64	8,43	13,71	48,65	8,62	13,94	13,94	
51,26	8,05	12,83	51,30	8,18	13,22	13,22	
47,02	8,43	17,23	47,19	8,48	17,39	17,39	
44,00	6,73	16,08	43,75	6,82	16,12	16,12	
51,28	8,29	12,93	51,28	8,18	13,23	13,23	
53,21	8,44	12,34	53,21	8,52	12,48	12,48	
55,40	7,52	12,02	55,80	7,42	11,99	11,99	
50,39	7,85	10,44	50,52	7,95	16,29	16,29	
59,52	7,98	12,51	59,49	7,95	12,79	12,79	
49,57	6,84	14,05	49,53	6,93	14,20	14,20	
59,50	9,03	9,94	59,58	9,00	10,24	10,24	
40,84	5,20	17,26	40,92	5,15	17,59	17,59	

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Legend: 1 - compound, 2 - yield, 3 - boiling point °C/mm Hg, 6 - obtained,
and 7 - calculated amount.

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LUTSENKO, I.F.; PONOMAREV, S.V.

Reaction of trialkylalkoxystannanes with ketene. Zhur.ob.khim.
31 no.6:2025-2027 Je '61. (MIRA 14:6)

1. Moskovskiy gosudarstvennyy universitet.
(Tin organic compounds) (Ketene)

LUTSENKO, I.F.; KIRILOV, M.; OVCHINNIKOVA, G.A.

Phosphorylated chlorovinyl ketones. Part 3: Reaction of phosphorus pentachloride with enol esters. Zhur.ob.khim. 31 no.6:2028-2033
Je '61. (MIRA 14:6)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.
(Phosphorus chloride) (Enols)

LUTSENKO, I.F.; KIRILOV, M.; POSTNIKOVA, G.B.

Phosphorylated chlorovinyl ketones. Part 4: Primary products
of the reaction between phosphorus pentachloride and enol esters.
Zhur.ob.khim. 31 no.6:2034-2036 Je '61. (MIRA 14:6)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.
(Phosphorus pentachloride) (Enols)

LUTSENKO, I.F.; KIRILOV, M.

Phosphorylated chlorovinyl ketones. Part 5: Products of addition of phosphorus pentochloride to enol esters and their rearrangement to phosphorylated chloro ketones. Zhur. ob. khim. 31 no. 11:3594-3601 N '61. (MIRA 14:11)

(Enols) (Phosphorus chloride) (Ketones)

LUTSENKO, I.F.; FOSS, V.L.; IVANOVA, N.L.

Reaction of ketene with mercury salts. Dokl. AN SSSR 141 no.5:
1107-1108 D '61. (MIRA 14:12)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.
Predstavleno akademikom A.N. Nesmeyanovym.
(Ketene) (Mercury salts)

LUTSENKO, I. F.

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PHASE I BOOK EXPLOITATION

SOV/6034

Konferentsiya po khimii i primeneniyu fosfororganicheskikh soyedineniy. 2d, Kazan', 1959.

Khimiya i primeneniye fosfororganicheskikh soyedineniy; trudy (Chemistry and Use of Organophosphorus Compounds; Conference Transactions) Moscow, Izd-vo AN SSSR, 1962. 630 p. Errata slip inserted. 2800 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Kazanskiy filial.

Resp. Ed.: A. Ye. Arbuzov, Academician; Ed. of Publishing House: L. S. Povarov; Tech. Ed.: S. G. Tikhomirova.

PURPOSE: This collection of conference transactions is intended for chemists, process engineers, physiologists, pharmacists, physicians, veterinarians, and agricultural scientists.

COVERAGE: The transactions include the full texts of most of the scientific papers presented at the Second Conference on the Chemistry and Use of

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Chemistry and the Use of Organophosphorus (Cont.)

SOV/6034

Organophosphorus Compounds held at Kazan' from 2 Nov through 1 Dec 1959. The material is divided into three sections: Chemistry, containing 67 articles; Physiological Activity of Organophosphorus Compounds, containing 26 articles; and Plant Protection, containing 12 articles. The reports reflect the strong interest of Soviet scientists in the chemistry and application of organophosphorus compounds. References accompany individual reports. Short summaries of some of the listed reports have been made and are given below.

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Chemistry and the Use of Organophosphorus (Cont.)

SOV/6034

Lutsenko, I. F., Z. S. Krayts, and A. P. Bokovoy. [Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)]. Vinyl Esters of Acids of Phosphorus

305

Vinyl esters of phosphorous, phosphorothioic, phosphonic, and α -ketophosphonic acids, as well as substituted vinyl esters of phosphorous and phosphoric acids, have been obtained and their properties described. The methods used in obtaining the esters have also been described in detail.

Chang, Jung-Yll. [Institute of Organoelemental Compounds]. Esters of Unsaturated Phosphonic Acids

310

Esters of unsaturated phosphonic acids have been synthesized and for the first time described in the scientific literature. The methods of synthesis are described in detail.

Kamay, Gil'm, and V. S. Tsivunin [Kazan' Institute of Chemical Technology imeni S. M. Kirov]. Some Derivatives of Ethylalkenyl Phosphonic Acids

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LUTSENKO, I.F.; KIRILOV, M.; POSTNIKOVA, G.B.

Phosphorylated chlorovinyl ketones. Part 6: β -Acyloxyalkenylphosphinic acid esters. Zhur. ob. khim. 32 no.1:263-266 Ja '62.
(MIRA 15:2)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.
(Phosphinic acid)

TSVID, A., kand.tekhn.nauk; LUTSENKO, I.; PIKHAY, G.; SAKHAROV, M.;
ZLODEYEV, P.; DENISENKO, V.

We get word. Stroitel' no.7:7 JI '61. (MIRA 14:8)
(Construction industry--Technological innovations)

LUTSENKO, I.F.; PONOMAREV, S.V.; PETRIY, O.P.

Reactions of trialkylalkoxystannanes with unsaturated compounds.
Zhur.ob.khim. 32 no.3:896-900 Mr '62. (MIRA 15:3)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.
(Tin organic compounds)

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Khimiya i Prikladnaya Tekhnologiya Organicheskikh Soedineniy (Chemistry and Application of Organophosphorus Compounds) A. Ye. Arbutov, Ed. publ. by Kazan' Affil, Acad. Sci. USSR, Moscow, 1962 632pp.

Collection of complete papers presented at the 1959 Kazan Conference on Chemistry of Organophosphorus Compounds.

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Khimiya i Prikladnye Yedroorganicheskikh Soedineniy (Chemistry and Application of Organophosphorus Compounds) A. Ye. Arbutov, Ed. publ. by Kazan' Affil, Acad. Sci. USSR, Moscow, 1962 632pp.

Collection of complete papers presented at the 1959 Kazan Conference on Chemistry of Organophosphorus Compounds.

LUTSENKO, I.F., KIRILOV, M.

.Reaction of phosphorus pentachloride with enolacetates.

Khimiya i Primeneniye Fosfororganicheskikh Soyedineniy (Chemistry and application of organophosphorus compounds) A. YE. ARBUZOV, Ed.
Publ. by Kazan Affil. Acad. Sci. USSR, Moscow 1962, 632 pp.

Collection of complete papers presented at the 1959 Kazan Conference on Chemistry of Organophosphorus Compounds.

LUTSENKO, I.F.; KRAYTS, Z.S.

Vinyl and substituted vinyl esters of phosphorous acid. Zhur.ob.
khim. 32 no.5:1663-1665 My '62. (MIRA 15:5)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.
(Phosphorous acid) (Vinyl alcohol)

BAUKOV, Yu.I.; LUTSENKO, I.F.

Esters of trialkylgermylacetic acid. Zhur.ob.khim. 32 no.8:2746-
2747 Ag '62. (MIRA 15:9)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.
(Acetic acid) (Germanium compounds)

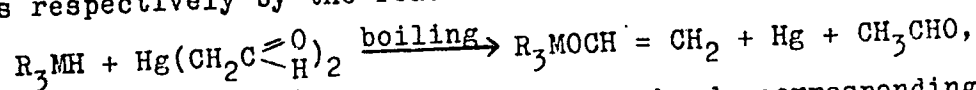
S/079/62/032/011/012/012
D204/D307

AUTHORS: Baukov, Yu.I., and Lutsenko, I.F.

TITLE: Synthesis of vinyloxysilanes and their germanium analogs

PERIODICAL: Zhurnal obshchey khimii, v. 32, no. 11, 1962,
3838 - 3839

TEXT: Triethylvinyloxysilane (A), tripropylvinyloxygermane (B) and tributylvinyloxygermane (C) were prepared, in 54, 60 and 54 % yields respectively by the reaction



where M is Si or Ge. Intense ir absorption bands corresponding to the C-C bond were observed, at 1640 cm⁻¹ for A 1618 cm⁻¹ for B and 1616 cm⁻¹ for C. A medium-intensity 1700 cm⁻¹ band was also observed for B and C, indicating the presence of isomers containing the -CHO group. The b.p's refractive indices (n_D²⁰) and densities

Card 1/2

Synthesis of vinyloxysilanes ...

S/079/62/032/011/012/012
D204/D307

(d_4^{20}) were respectively: A-52-54°C/20 mm Hg, 1.4260, 0.8274; B-88-91°C/7 mm Hg, 1.4565, 1.0177; C-86.5-90°C/1 mm Hg, 1.4580, 0.9879.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova (Moscow State University imeni M.V. Lomono-
sov)

SUBMITTED: July 23, 1962

Card 2/2

FOSS, V.L.; ZHADINA, M.A.; LUTSENKO, I.F.; NESMEYANOV, A.N.

Reaction of ketene with quasicomplex compounds of mercury.
Zhur.ob.khim. 33 no.6:1927-1933 Je '63. (MIRA 16:7)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.
(Ketene) (Mercury compounds)

LUTSENKO, I.F.; KIRILOV, M.

Interaction of phosphoric pentachloride with enol esters. Pt. 1 and 2.
Godishnik khim 55 no.3:135-187 '60/61 (publ.'62).

1. Katedra po ornaichna khimiia pri Moskovskiaa durzhaven
universitet M.V. Lomonosov.

FOSS, V.L.; KUDINOVA, V.V.; POSTNIKOVA, G.B.; LUTSENKO, I.F.

Derivatives of β -ketophosphinic acids. Dokl. AN SSSR 146 no.5:
1106-1108 0 '62. (MIRA 15:10)
(Phosphinic acid)

LUTSENKO, I.F.; BAUKOV, Yu.I.; KHASAPOV, B.N.

Esters of α -metalated carboxylic acids. Preparation of esters of trialkylstannyl- and trialkylgermanylacetic acid from esters of mercuri-bis-acetic acid. Zhur. ob. khim. 33 no.8:2724-2727 Ag '63. (MIRA 16:11)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.

POSTINKOVA, G.B.; LUTSENKO, I.F.

Reaction of phenylphosphine with organomercury compounds. Zhur.ob.
khim. 33 no.12:4029 D '63. (MIRA 17:3)

PONOMAREV, S. V.; BAUKOV, Yu. I.; LUTSENKO, I. F.;

Esters of α -metalated carboxylic acids. Esters of dialkylacetyl-
bisacetic acid. Zhur. ob. Khim. 34 no.6:1938-1940 Je '64.

(MIRA 17:7)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

LUTSENKO, I.F.; KRAYTS, Z.S.; PROSKURNINA, M.V.

Preparation of α, β -alkenylphosphoryl halides. Dokl. AN SSSR
148 no.4:846-849 F '63. (MIRA 16:4)

1. Moskovskiy gosudarstvennyy universitet universitet im. M.V.
Lomonosova. Predstavleno akademikom A.N.Nesmeyanovym.
(Phosphoryl halides)

PONOMAREV, S.V.; LUTSENKO, I.F.

Reactions of α -metalated organotin ketones and esters. Zhur. ob.
khim. 34 no.10:3450-3453 O '64.

(MIRA 17:11)

1. Moskovskiy gosudarstvennyy universitet im. Lomonosova.

L 16673-65 EMT(m)/EPF(c)/ENP(j) Pc-4/Pr-4 ESD(gs)/SSD/AFWL RM
ACCESSION NR: AP4047651 S/0079/64/034/010/3453/3456

AUTHOR: Baukov, Yu. I. ; Lutsenko, I. F. B

TITLE: Esters of metal-containing carboxylic acids. Esters of dialkylgermanyl-
bis- and dialkylgermanyl-acetic acids 9

SOURCE: Zhurnal obshchey khimii, v. 34, no. 10, 1964, 3453-3456

TOPIC TAGS: germanium, carboxylic acid, organogermanyl compound

ABSTRACT: Dialkylgermanylbis acetic acid (I) and dialkylgermanylacetic acid (II) were formed by exchange reactions between esters of mercuribisacetic acid (III) and alkylgermanyl hydrides, depending on the reactant ratios: (R = n-C₃H₇, and n-C₄H₉) $R_2GeH_2 + Hg(CH_2COOCH_3)_2 \longrightarrow R_2Ge(H)CH_2COOCH_3 + Hg + CH_3COOCH_3$; $R_2GeH_2 + 2Hg(CH_2COOCH_3)_2 \longrightarrow R_2Ge(CH_2COOCH_3)_2 + 2CH_3COOCH_3$. Reaction of equimolar amounts of III with dialkylgermanyl iodide resulted in II: $(n-C_3H_7)_2GeI_2 + Hg(CH_2COOCH_3)_2 \longrightarrow (n-C_3H_7)_2Ge(CH_2COOCH_3)_2 + HgI_2$.

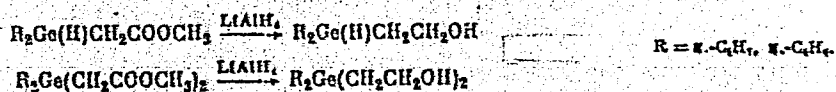
Card 1/2

L 16673-65

ACCESSION NR: AP4047651

3

Reduction of I or II with lithium aluminum hydride resulted in the corresponding germanium-containing glycols and alcohols:



The physical constants of all the products are tabulated. The compound structures were confirmed by IR spectroscopy. "The experimental work was conducted with the participation of students I. I. Bocharov and B. N. Khasapov." Orig. art. has: 5 equations and 1 table

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M. V. Lomono-
sova (Moscow State University)

SUBMITTED: 29Jul63

ENCL: 00

SUB CODE: **OC**

NO REF SOV: 002

OTHER: 903

Card 2/2

BAUKOV, Yu.I.; BURLACHENKO, G.S.; LUTSENKO, I.F.

Rearrangement of α -trialkylsiloxyvinylalkyl esters to
trialkylsilylacetic acid esters. Dokl. AN SSSR 157 no.1:
119-121 J1 '64 (MIRA 17:8)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.
Predstavleno akademikom A.N. Nesmeyanovym.

PROSKURINA, M.V.; NOVIKOVA, Z.S.; LUTSENKO, I.F.

Derivatives of carbalkoxymethylphosphinous acids. Dokl. AN
SSSR 159 no.3:619-621 N '64 (MIRA 18:1)

1. Moskovskiy gosudarstvennyy universitet. Predstavleno akade-
mikom A.N. Nesmeyanovym.

L 58499-65 ENT(m)/EPF(c)/ENP(j) Pc-4/Pr-4 EM
 ACCESSION NR: AP5019584 UR/0020/64/159/003/0619/0621

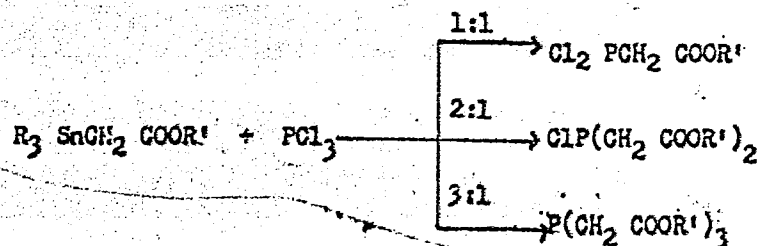
AUTHOR: Proskurnina, M. V.; Novikova, Z. S.; Lutsenko, I. F.

TITLE: Derivatives of Carbalkoxymethylphosphinous acids

SOURCE: AN SSSR. Doklady, v. 159, no. 3, 1964, 619-621

TOPIC TAGS: ester, acetic acid, organic phosphorus compound

ABSTRACT: It was established that by reacting triethyl or tributyl-stanny-lacetic acid esters with PCl_3 and varying the ratio of reagents, compounds of the following types could be synthesized:



Card 1/2

L 58499-65

ACCESSION NR: AP5019584

2

The yields of the products were 80-90%. Monoalkyl dichlorophosphites and dialkyl monochlorophosphites reacted similarly: $R_3 SnCH_2 COOR' + (R''O)_2 PCl \rightarrow$

$\rightarrow (R''O)_2 PCH_2 COOR'$. Esters of substituted phosphinous acids of this type could also be prepared starting from the chlorophosphines prepared by the reaction with trialkylstannylacetic acid esters. All derivatives of trivalent P that were synthesized underwent oxidation in air with spontaneous heating. By passing air through ether solutions of tris-(carbalkoxy)-methylphosphines, the corresponding oxides were obtained. The following compounds were prepared: $RPCL_2$, $R'PCL_2$, $R_2'PCL$, $R_3'P$, $R_2'P$, $RP(OEt)_2$, $R'P(OEt)_2$, $R_2'POEt$, $R_3'PO$, $R_2'PO$ (where $R = CH_2COOMe$ and $R' = CH_2COOEt$).

Orig. art. has: 1 table.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 09Jul64

ENCL: 00

SUB CODE: OC,GC

NR REF SOV: 005

OTHER: 000

JPRS

111
Card 2/2

DANILOV, S.N., glav. red.; ARBUZOV, A.Ye., red.; VVEDENSKIY, A.A., red.; VENUS-DANILOVA, E.D., red.; ZAKHAROVA, A.I., red.; IOFFE, I.S., red.; KAVERZNEVA, Ye.D., red.; LUTSENKO, I.P., red.; MISHCHENKO, K.P., red.; NEMTSOV, M.S., red.; PETROV, A.A., red.; FREYDLINA, R.Kh., red.; SHEMYAKIN, M.M., red.; SHUKAREV, S.A., red.; YUR'YEV, Yu.K., red.

[Biologically active compounds] Biologicheski aktivnye soedineniia. Moskva, Nauka, 1965. 305 p.

(MIRA 18:7)

DANILOV, S.N., glav. red.; ZAKHAROVA, A.I., red.; ARBUZOV, A.Ye., red.; VVEDENSKIY, A.A., red.; VENUS-DANILOVA, E.D., red.; IOFFE, I.S., red.; KAVERZNEVA, Ye.D., red.; LUTSENKO, I.F., red.; MISHCHENKO, K.P., red.; NEMTSEV, M.S., red.; PETROV, A.A., red.; FREYDLINA, R.Kh., red.; SHEMYAKIN, M.M., red.; SHCHUKAREV, S.A., red.; YUR'YEV, Yu.K., red.

[Problems of organic synthesis] Problemy organicheskogo sinteza. Moskva, Nauka, 1965. 323 p. (MIRA 18:8)

PETROVSKAYA, L.I.; BURLACHENKO, G.S.; FEDIN, E.I.; BAUKOV, Yu.I.;
LUTSENKO, I.F.

Proton magnetic resonance of esters of metalated (Si, Ge, Sn)
acetic acid and O-silyl-O-alkylketene acetals. Zhur.strukt.khim.
6 no.5:781-783 S-O '65. (MIRA 18:12)

1. Institut elementoorganicheskikh soyedineniy AN SSSR i
Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.
Submitted April 29, 1965.

BAUKOV, Yu.I.; BURLACHENKO, G.S.; LUTENKO, I.F.

Synthesis of O-silyl-substituted enols and related compounds.
Zhur. ob. khim. 35 no.4:757-758 Ap '65.

(MIRA 18:5)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.

FOSS, V.L.; BESOLOVA, Ye.A.; IUTSENKO, I.F.

Reaction of esters of antimonous acid with ketene. Zhur. ob.
khim. 35 no.4:759-760 Ap '65.

(MIRA 18:5)

BURLACHENKO, G.S.; BAUKOV, Yu.I.; LUTSENKO, I.F.

Properties of O-(trialkylsilyl)-O-methyl ketene acetals. Thermal decomposition and reaction with ketene. Zhur. ob. khim. 35 no.5: 933-934 My '65. (MIRA 18:6)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

BAUKOV, Yu.I.; BELAVIN, I.Yu.; LUTSENKO, I.P.

Study of O- and C-organometallic isomers. Part 1: Reaction of dialkylhalogermenes and dialkylchlorostannanes with esters of mercury bisacetic acid. Zhur. ob. khim. 35 no.6:1092-1094, Je '65. (MIRA 18:6)

BAUKOV, Yu.I.; BURLACHENKO, G.S.; LUTSENKO, I.F.

Study of O- and C- organometallic compounds. Part 2: Production and reaction of trialkylsilyl- and trialkylgermanyacetic acid esters. Zhur. ob. khim. 35 no.7:1173-1177 J1 '65.

(MIRA 18:8)

KAZANKOVA, M.A.; ISTOMENKO, I.I.; NIKIFOROV, A.N.

Reaction of α -substituted carboxyl compounds with a ketene
dimer. Zhur'on, Khim. 35 no.8, 1447-1451, 6p, 1961.

(MIRA 2.2)

BURLACHENKO, G.S.; AVDEYEVA, V.I.; BAUKOV, Yu.I.; LUTSENKO, I.F.

Reaction of alkoxytrichlorogermanes with ketene. Zhur. ob.
khim. 35 no.10:1881 O '65. (MIRA 18:10)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.

L 25608-66 EWT(m)/EWP(j) RM

ACC NR: AP6016700

SOURCE CODE: UR/0079/65/035/012/2204/2207

AUTHOR: Postnikova, G. B.; Kostyuk, A. S.; Lutsenko, I. F.

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

26
B

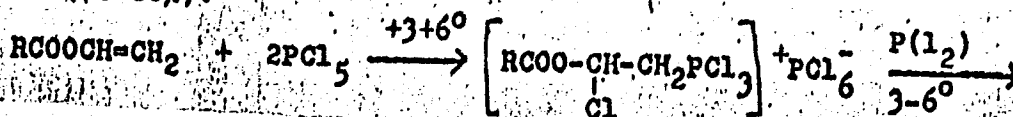
TITLE: Derivatives of functionally substituted phosphinous acids

SOURCE: Zhurnal obshchey khimii, v. 35, no. 12, 1965, 2204-2207

TOPIC TAGS: phosphorus chloride, ester, carboxylic ester, phosphinic acid, nonmetallic organic derivative, organic phosphorous compound

ABSTRACT: Results of the study of the reduction of adducts of phosphorus pentachloride with complex esters of enols, using the adducts of phosphorus pentachloride with the vinyl esters of propionic, butyric, and benzoic acids as well as with isopropenylbenzoate are presented.

In the case of the vinyl esters of propionic and butyric acids, the acid chlorides of beta-propionyloxy-beta-chlor- and beta-butyroxy-beta-chlorethylphosphinous acids were obtained in high yields (70-80%).



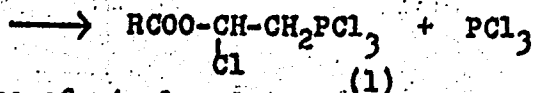
Card 1/2

UDC: 547.341

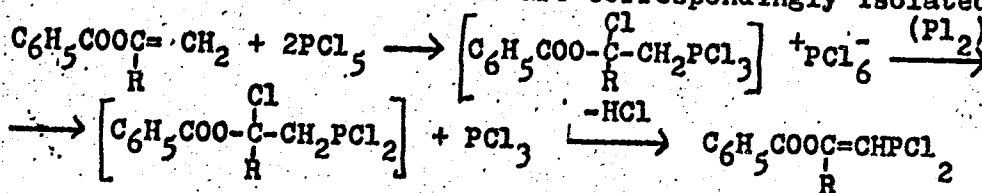
2

L 25608-66

ACC NR: AP6016700



In the case of vinyl and isopropenyl esters of benzoic acid the cleavage of hydrogen chloride occurs in the reaction while still cold and the acid chlorides of beta-benzoyloxyvinyl- and beta-benzoyloxpropenylphosphinous acids are correspondingly isolated:



(A)

(II)

Compounds type A, for derivatives of phosphorus pentachloride (acid chlorides of beta-benzoyloxy-beta-chlorethyl(propyl)phosphinic acids) are completely stable under the normal conditions and cleave off HCL only with long heating up to 100°. Constants and yields of all the prepared compounds are presented. [JPRS]

SUB CODE: 07 / SUBM DATE: 20Jan65 / ORIG REF: 002

Card 2/2 *fy*

L 31796-66 EWT(m) RM
ACC NR: AP6021687 SOURCE CODE: UR/0079/66/036/003/0512/0518
AUTHOR: Burlachenko, G. S.; Khasapov, B. N.; Petrovskaya, L. I.; Baukov, Yu. I.;
Lutsenko, I. E.
ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet) 62 B
TITLE: Investigation in the field of O- and C-heteroorganic isomers. IV. Reaction of chlorosilanes with esters of trialkylstannylacetic acid
SOURCE: Zhurnal obshchey khimii, v. 36, no. 3, 1966, 512-518
TOPIC TAGS: isomer, ester, acetic acid, chemical reaction, chlorinated organic compound, silane, IR spectrum, nuclear magnetic resonance, spectrum analysis, reaction mechanism
ABSTRACT: The reaction of esters of trialkylstannylacetic acid with chlorosilanes $[\text{SiCl}_4, \text{CH}_3\text{SiCl}_3, (\text{CH}_3)_2\text{SiCl}_2]$ was studied. The investigated chlorosilanes were found to react readily with the methyl esters of trialkylstannylacetic acids, yielding either the O- or the C-isomers in high yields, depending upon the time and temperature of the experiment (the O-isomer rearranges to the C-silylated product upon heating). Replacement of the chlorine atoms by alkyl groups in the O-derivatives gradually lowers their ability to isomerize. The proton magnetic resonance and infrared spectra of the compounds are discussed. Orig. art. has: 2 figures and 1 table.
/JPRS/
SUB CODE: 07 / SUBM DATE: 30Jan65 / ORIG REF: 008 / OTH REF: 001
Card 1/1 Ls UDC: 547.245

L 06509-67 EWT(m)/EWP(j) RM
ACC NR: AP7000483

SOURCE CODE: UR/0079/66/036/006/1129/1133

POSTNIKOVA, G. B., KOSTYUK, A. S., LUTSENKO, I. F., Moscow State University
im. Lomonosov (Moskovskiy gosudarstvennyy universitet)"Beta-phosphorylated Vinyl Esters of Carboxylic Acids" 21
B

Moscow, Zhurnal Obshchey Khimii, Vol 36, No 6, 1966, pp 1129-1133

Abstract: A method was developed for synthesizing chlorides and esters of beta-acyloxyvinylphosphinic acids. Chlorides of beta-acyloxy-beta-chloroethylphosphinous acids were prepared by reduction of adducts of phosphorus pentachloride to vinyl esters of carboxylic acids with white phosphorus. Esterification of these chlorides with alcohol in the presence of a base yielded complete esters of beta-acyloxy-beta-chloroethylphosphinous acids. Derivatives of beta-acyloxyvinylphosphinous acids could not be obtained from the esters; however, dehydrochlorination of chlorides of beta-acetoxy-beta-chloroethylphosphinous acids proceeded readily to chlorides of beta-acyloxyvinylphosphinous acids, in 70-90% yields. Esterification of these chlorides with alcohol in the presence of pyridine yielded complete esters of beta-acyloxyvinylphosphinous acids. Orig. art. has: 2 figures and 1 table. [JPRS: 37,023]

TOPIC TAGS: vinyl compound, phosphorus chloride, ester
SUB CODE: 07 / SUBM DATE: 25Jan65 / ORIG REF: 003

Card 1/1 LS

UDC: 547.341

C923

1197

ACC NR: AP7005107

SOURCE CODE: UR/0079/66/036/009/1679/1684

AVDEYEVA, V. I., BURLACHENKO, G. S., BAUKOV, Yu. I., LUTSENKO, I. F., Moscow
State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

"Studies of O- and C-Organometallic Isomers. V. Reaction Between Germane
Halides and Esters of Trialkylstannylacetic Acid and Trialkylalkoxystannanes"

Moscow, Zhurnal Obshchey Khimii, Vol 36, No 9, 66, pp 1679-1684

Abstract: In a continuation of a previous investigation, the possibility of using readily available esters of trialkylstannylacetic acid in the reaction with germanium halides was established. This is a convenient method for the synthesis of alkoxygermanes, because it provides a rapid and easy way of substituting the halide atoms attached to the germanium atom with the corresponding alkoxy groups. The yields of alkoxygermanes are 70-95%. The physical constants and IR spectra of the methyl ester of trimethoxygermanylacetic acid synthesized by this method were found to be in agreement with those of the same ester when synthesized by reacting the methyl ester of tributylstannylacetic acid with trimethoxychloro-germane. Orig. art. has: 1 figure, 6 formulas and 1 table. [JPRS: 38,970]

TOPIC TAGS: organotin compound, organogermanium compound, IR spectrum

SUB CODE: 07 / SUBM DATE: 21Jun65 / ORIG REF: 006 / OTH REF: 006

Card 1/1

UDC: 547.469:546.289.811:541.62

1057 1156

ACC NR: AP7003118

SOURCE CODE: UR/0079/66/036/007/1348/1348

AUTHOR: Ponomarev, S. V.; Rogachev, B. G.; Lutsenko, I. F.ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)TITLE: Synthesis of vinylloxystannanes

SOURCE: Zhurnal obshchey khimii, v. 36, no. 7, 1966, 1348

TOPIC TAGS: vinyl compound, organic synthetic process, organotin compound

ABSTRACT: In the reaction of trialkylalkoxystannanes with enolacetates of isobutyric and isovaleric aldehydes, probably as a result of steric hindrances, previously undescribed organotin O-derivatives of the enol form of the aldehydes are formed instead of the expected alpha-stannylated carbonyl compounds. Dropwise addition of trialkylmethoxystannane to the enolate of the corresponding aldehyde produced exothermic reactions, yielding vinylloxystannanes: triethyl-(beta,beta-dimethyl)-vinylloxystannane, triethyl(beta-isopropyl)vinylloxystannane, and tripropyl(beta,beta-dimethyl)vinylloxystannane. The infrared, ultraviolet, and proton magnetic resonance spectra of the compounds obtained are discussed. Reaction of triethyl(beta,beta-dimethyl)vinylloxystannane with methanol leads to transesterification of the O-organotin derivative. [JPRS: 38,970]

SUB CODE: 07 / SUBM DATE: 08Jan66 / ORIG REF: 001 / OTH REF: 001

Card 1/1

UDC: 547.35

0925

0074

ACC NR: AP7012427

SOURCE CODE: UR/0079/66/036/010/1863/1864

AUTHOR: Kudinova, V. V.; Foss, V. L.; Lutsenko, I. F.

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: New methods of synthesizing functionally substituted organic arsenic derivatives

SOURCE: Zhurnal obshchey khimii, v. 36, no. 10, 1966, 1863-1864

TOPIC TAGS: acetic acid, organic arsenic compound

SUB CODE: 07

ABSTRACT: The authors developed a number of methods for the preparation of alpha-arsenated ketones, esters, and amides of acetic acid. The first representative of alpha-arsenated ketones -- phenyldi (butanone-2-yl-1(arsine)-2-sulfide) was prepared by boiling phenylarsenic sulfide with mercuribis-methyl ethyl ketone in xylene. The methyl ester of di(carboxymethyl)phenylarsine was prepared 1) by heating phenylarsenic sulfide with the methyl ester of mercuribis-acetic acid and 2) by heating phenyldichloroarsine with the methyl ester of triethylstannylacetic acid. Other esters of di(carboxymethyl)-phenylarsines were prepared analogously. The diethylamide of dipropylarsylacetic acid was

Card 1/2

UDC: 547.242

09327 1326

ACC NR: AP7012427

prepared by the exothermic reaction of ketone with diethylaminodipropylarsine. The organoarsenic compounds were prepared in 50-60% yields, and their structures were confirmed by infrared spectroscopy. Orig. art. has: 4 formulas and 1 table. [JPRS: 40,422]

3/2

BABADZHANOVA, Vera Ivanovna; KAMINSKIY, Yuriy Konstantinovich;
KLYSHNIKOV, Feder Leont'yevich; LUTSENKO, Illarion
Grigor'yevich; PILETSKIY, Valerian Aleksandrovich;
SOLOVEYCHIK, Mikhail Zakharovich; KOLTUNOVA, M.P., red.

[Passenger's manual] Spravochnik passazhira. Moskva,
Transport, 1965. 375 p. (MIRA 18:8)

PILETSKIY, V.A.; SOLOVEYCHIK, M.A.; KLYSHNIKOV, F.L.; BABADZHANOVA, V.I.;
LUTSENKO, I.G.; KAMINSKIY, Yu.K.; FRIDMAN, M.I.; KARPOVA, N.L.,
red.; BOEROVA, Ye.N., tekhn. red.

[Passenger's handbook] Spravochnik passazhira. Moskva, Trans-
zheldorizdat, 1962. 367 p. (MIRA 15:6)
(Transportation—Timetables)

L 3138-66	EWT(m)/EFF(c)/ETC/EFF(n)-2/EWG(m)/EWP(t)/EWP(b)	IJP(c)	JD/WW/JG
AM5022854	BOOK EXPLOITATION	29 UR/ 27 621.039.7 B+1	
Bakhurov, Vasilii Gerasimovich; Lutsenko, Inna Kirillovna; Shashkina, Nadezhda Nikolayevna			
Radioactive wastes ¹⁹ from uranium plants (Radioaktivnyye otkhody uranovykh zavodov) Moscow, Atomizdat, 1965. 150 p. illus., biblio. 2500 copies printed			
TOPIC TAGS: radioactive waste disposal, radioactive contamination, uranium, radioactive waste storage			
PURPOSE AND COVERAGE: This book is intended for engineering and technical personnel concerned with radioactive wastes from uranium processing plants. The characteristics of radioactive industrial wastes, methods for their removal from uranium processing plants, waste storage, effect of wastes on their surroundings, methods for analyzing small amounts of radioactive substances, and some procedures to purify and decontaminate wastes are covered. Some foreign sources were used for the material on the purification and decontamination of wastes and on uranium processing plants.			
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L 3138-66

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Introduction and Chs. 4, 6, 7, and 8 were written by V. G. Bakhurov, Chs. 1, 2, and 3, by I. K. Lutsenko, and Chs. 5 and 9, by N. N. Shashkina. The authors thank B. S. Kolychev and B. V. Nevakiy.

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SUB CODE: NP

SUBMITTED: 14Apr65

NO REF SOV: 106

OTHER: 040

Card ⁿⁱ 393

LUTSENKO, I. M.

Lutsenko, I. M. and Terekova, Ye. N. "Rationalization of Methods for Measuring Discharges of Suspended Sediments," Sotsialisticheskaya nauka i tekhnika (Socialist Science and Engineering) no 4, 1937.

SO: U-3039, 11 Mar '1953

ACC NR: AP 7001723

SOURCE CODE: UR/0048/66/030/012/1930/1934

AUTHOR: Vasil'yev, V.P.; Lutsenko, I.M.

ORG: none

TITLE: Radioactive tracer investigation of the evaporation of barium oxide from different substrates [Report Twelfth All-Union Conference on the Physical Fundamentals of Cathode Electronics held at Leningrad, 22 - 26 Oct. 1965]

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 12, 1966, 1930-1934

TOPIC TAGS: evaporation, barium, barium oxide, cathode, tracer study

ABSTRACT: The authors have employed radioactive Ba^{140} as a tracer to investigate evaporation of Ba and BaO from barium-strontium-calcium oxide cathodes on nickel bases and from barium oxide cathodes on platinum, nickel, and molybdenum bases. The 5 mm diameter disk cathode containing Ba^{140} was mounted below a rotatable molybdenum anode and the radioactivities of different parts of the anode were measured after exposure for different times to the hot cathode. Attempts to make use of the supplementary adsorption of radioactive I^{131} by adsorbed Ba to distinguish between evaporation of Ba and BaO from nickel base cathodes failed because of competition for the I^{131} by adsorbed nickel originating in the cathode base. The other base materials did not significantly adsorb iodine, however, and for these bases the Ba and BaO

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ACC NR: AP 7001723

evaporation rates were separately determined. The evaporation rate decreased rapidly with time and approached an equilibrium rate which in the case of the Ba-Sr-Ca cathode was reached after about 16 hours at 800° C, 5 hours at 900°, and 3 hours at 1000°. The evaporation rate was proportional to $\exp(-E/kT)$, where T is the temperature and $E/k = 19\,000^\circ$. This value of E/k is not far from that found by B.P.Nikonov and N.G.Otmakhova (Zh. fiz. khimii, 35, No.7, 1494 (1961)). The actual BaO evaporation rates were in all cases lower than those found by other investigators; it is suggested that this may be due to the high density of the present coatings. The BaO evaporation rate was lowest from the Pt base (or, at least 1000°, from the Ni base) and highest from the Mo base. The evaporation rate of excess (uncombined) Ba from the Mo base also increased with increasing temperature. Anomalous changes in the excess Ba evaporation rate at fixed temperature were noted and are ascribed to side effects. The fact that excess barium appears on the active molybdenum base is not subject to doubt, but the mechanism of the interaction between the base and the oxide is not understood. The authors thank B.P.Nikonov for suggesting the topic and for assistance with the work. Orig.art. has: 1 formula, 4 figures and 2 tables.

SUB CODE: 20

SUBM DATE: None

ORIG. REF: 010

OTH REF: 001

Card 2/2

16()

SOV/155-58-3-14/37

AUTHOR:

Lutsenko, I. Ye.

TITLE:

Bounded Operators Commutating With a Linear Second Order
Differential Operator (Ogranichenyye operator, perestanovoch-
nyye s lineynym differentialnym operatorom vtorogo poryadka)

PERIODICAL:

Nauchnyye doklady vysshey shkoly. Fiziko-matematicheskiye nauki,
1958, Nr 3, pp 75-78 (USSR)

ABSTRACT:

Theorem: In order that a linear bounded operator O commutes
with the operator $Ly = y''$ it is necessary and sufficient that
 O is a linear combination of P_+ , P_- and P_x :

$$P_{\pm} f(x) = \frac{1}{2} [f(x) \pm f(-x)], \quad P_x f(x) = \int_{-x}^x f(t) dt.$$

Theorem: In order that O commutes with $Ly = y'' - q(x)y$,

$q(x) \equiv \overline{q(x)} \in L^{(1)}(-1, 1)$ it is necessary and sufficient that O is
a linear combination of Q_+ , Q_- , Q_x :

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Bounded Operators Commutating With a Linear Second
Order Differential Operator

SOV/155-58-3-14/37

$$Q_{\pm} = WP_{\pm}W^{-1}, \quad Q_x = WP_xW^{-1}, \quad W[f] = f(x) + \int_{-x}^x A(x,t)f(t)dt,$$

where $A(x,t)$ is a real bounded kernel.

Theorem: If $q(-x) \equiv q(x)$, then $U = e^{i\alpha}E_{+} \oplus e^{i\beta}E_{-}$ is the general form of a unitary operator commutating with L ; α, β real constants, E_{+}, E_{-} unit operators in the subspaces of the even and odd functions respectively.

The last theorem is the application of theorem 3 to involutions. The author thanks M.G.Kreyn and M.S.Livshits for advices.

ASSOCIATION: Odesskiy gidrometeorologicheskii institut (Odessa Hydrometeorological Institute)

SUBMITTED: April 28, 1958

Card 2/2

68014

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SOV/155-58-6-15/36

AUTHOR: Lutsenko, I.Ye.

TITLE: On Involutions of Linear Operators

PERIODICAL: Nauchnyye doklady vysshey shkoly. Fiziko-matematicheskiye nauki, 1958, Nr 6, pp 99-103 (USSR)

ABSTRACT: Let J be involution operator in the Hilbert space H , i.e. $(Jf, Jg) = (f, g)$ and $J^2 f = f$ for all $f, g \in H$. The isometric operator V is called J -isometric, if $J V J = V^{-1}$. An operator T is called J -real, if $J T J = T$. If the adjoint operator T^* exists and if $J T J = T^*$, then T is called J -selfadjoint. In the present paper the author gives necessary and sufficient conditions that an isometric (symmetric) operator be J -isometric (J -real). Altogether there are seven theorems and one lemma, e.g. :
Theorem 1a : If V is J -isometric, then among its characteristic matrix functions there are symmetric ones, and inversely: if there is one symmetric among the characteristic matrix-functions of an isometric operator, then the operator is J -isometric. ✓

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On Involutions of Linear Operators

SOV/155-58-6-15/36

Let the operator L be defined by $Ly = Ly'' + q(x)y$ and $y(-a) = y'(-a) = 0$ in $L^{(2)}(-a, a)$ where $\overrightarrow{q(x)} = q(x) \in dL^{(1)}(-a, a)$.

Theorem 5 : If $q(x)$ is even and if $J_1 f(x) = \overline{f(-x)}$, then it is $J_1 L J_1 = L^*$. Inversely : If it exists an involution J , so that $J L J = L^*$, then $q(x)$ is even and $J = e^{i\alpha} J_1$, where $\alpha = \text{const}$ is real.

The author thanks M.I. Livshits for advices.

There are 7 references, 6 of which are Soviet, and 1 American.

ASSOCIATION: Odesskiy gidrometeorologicheskii institut (Odessa Hydro-meteorological Institute)

SUBMITTED: July 29, 1958

Card 2/2

LUTSENKO, I.Ye.

Involutions of limited operators of a finite rank of nonhermitivity.
Trudy OGMI no.20:9-13 '59. (MIRA 14:10)
(Operators(Mathematics))

LUTSENKO, I.Ye.

Description of all involutes of a linear operator. Trudy OGI
no.27:17-19 '61. (MIRA 16:6)
(Operators (Mathematics))

GODICH, V.I.; LUTSENKO, I.A.

Representation of a unitary operator as the product of two
involutions, Usp. nat. nauk 20 no.6:64-65 M-D '65.
(MIRA 18:12)

1. Submitted Feb. 27, 1965.

107-57-4-11/54

AUTHOR: Lutsenko, K. , Chairman of the Board of the Sverdlovsk Oblast DOSAAF radio club, and Dedyulin, I. , a member of the Board of the Radio Club

TITLE: A Result of Concerted Work (Resul'tat družnoy raboty)

PERIODICAL: Radio, 1957, Nr 4, pp 12-13 (USSR)

ABSTRACT: On the occasion of the 30th anniversary of DOSAAF, the Sverdlovsk Radio Club was awarded the "Za aktivnuyu rabotu" (for efficient work) badge. Membership in the Sverdlovsk radio club is over 450. This is one of the oldest clubs of the USSR. Many of its members, like Kozlovskiy, Dedyulin, Portnyagin, Znamenskiy, Zolotin, and others, took part in the defense of the USSR during World War II and were distinguished with high State awards. Eight branch offices of the Sverdlovsk radio club are mentioned in the article. Considerable attention is paid to the training of radio operators and radio technicians. Margarita Karavayeva, who works as a radio operator with the merchant fleet, Kamchatka, is an alumna of the Sverdlovsk Radio Club. Old short-wave hams, like Zolotin (UA9DP), Kozlovskiy (UA9CF), and Blokhintsev (UA9CL), have been on the air since 1927 in Sverdlovsk. During the thirty years of their activities, they have established tens of thousands of

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107-57-4-11/54

A Result of Concerted Work

two-way contacts with all continents and with many countries of the world. Of the younger radio hams, Semenov (UA9DN), Os'mushin, Vyshinsky, Kozlov, and Pervushin are noted. Women radio hams Peresadina (UA9DF) and Semenova (UA9DA) have their own radio stations. The latter won first prize in the 1955 women's contest. A considerable development in ultrashort-wave radio amateurism is noted. There were no ultrashort-wave stations in Sverdlovsk oblast in 1946. There were fifty-nine individually owned and ten collectively owned ultrashort-wave stations as of December, 1956. Regular two-way radio communications on 38-40 mc, over distances of 1,500 km and more, have been established with Kaliningrad, Petrozavodsk, L'vov, Stanislav, Shaulay, Vitebsk, Tashkent, and other cities in the USSR. There were 204 exhibits built by the members of the Sverdlovsk club and displayed at the oblast radio amateur exhibition in 1956; eighty-two of them were cited and awarded various prizes. Recently, a Bulgarian engineer, Nikolov, asked for a description of the device built by a Sverdlovsk radio amateur, Kolosov. The device, which helps in the balancing of rotors for electrical machinery, was actually used by Nikolov in one of the Bulgarian factories. Other radio amateurs cited in the article are

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107-57-4-11/54

A Result of Concerted Work

Mironov, in the city of Nizhnyaya Tura, Unzhin, in the High School Nr 39, and Volodin, in Uralelektroapparat Factory.

There are four photos: (upper) A. Portnyagin (UA9CC), assistant professor at the Ural Politechnical Institute; V. Usol'tsev (070003), one of the first ultra-short-wave hams of Sverdlovsk; and V. Semenov (UA9DN), master of radio amateurism. Tishchenko (center) is explaining the construction of a radio station, Kamenets-Ural'sk.

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SCV/107-59-4-9/45

AUTHOR: Lutsenko, K., Chairman
 TITLE: Amateur Radio Stations for the Villages (S81am - radiolyubitel'skiye radiostantsii)
 PERIODICAL: Radio, 1959, Nr 4, pp 10 - 11 (USSR)
 ABSTRACT: The members of the Sverdlovsk DOSAAF Radio Club pledged to set up 400 short-wave and ultrashort-wave amateur stations in rural areas by 1960. They asked the members of other DOSAAF radio clubs in the Urals to support this effort. The goal is to have at least one short-wave or ultrashort-wave station at all large kolkhozes, sovkhoses and district centers. Long-time short-wave amateurs, among them K. Kozlovskiy (UA9CF), S. Zolotin (UA9DP), A. Blokhintsev (UA9CL), A. Portnyagin (UA9CC) and R. Unzhin (RA9CAA) will be available for consultation and have pledged to train one new radio amateur each. Simultaneously with this program, the operators of individual and group radio stations increased their effort in improving

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SOV/107-59-4-9/45

Amateur Radio Stations for the Villages

existing equipment. There is 1 photograph.

oblastnoy

ASSOCIATION: Sverdlovskiy/radioklub DOSAAF (Sverdlovsk Oblast' DOSAAF
Radio Club)

Card 2/2

LUTSENKO, K., glavnyy sud'ya sorevnovaniy

Radio direction finding. Radio no.9:8-9 S '60.

(MIRA 13:10)

1. III-1 Vsesoyuznyye sorevnovaniya radiosportsmenov "Okhota na lis."
(Radio direction finders)

LUTSENKO, K., sud'ya vsesoyuznoy kategorii

Outstanding starts. Radio no.10:20 0 '61. (MIRA 14:10)
(Radio operators) (Radio direction finders)

LUTSENKO, K.

A headquarters of the radio amateurs. Radio no.9:10-11 S
'62. (MIRA 15:9)

1. Predsedatel' Sverdlovskoy oblastnoy seksii radiosporta.
(Radio clubs) (Radio operators)

KAZANSKIY, N.; LUTSENKO, K., sud'ya vsesoyuznoy kategorii

Some results and beneficial lessons. Radio no.10:18-19 0 '62.
(MIRA 15:10)

1. Predsedatel' sportivnoy komissii Federatsii radiosporta SSSR
(for Kazanskiy). 2. Predsedatel' Sverdlovskoy oblastnoy sekti
radiosporta (for Lutsenko).

(Radio operators) (Amateur radio stations)

LUTSENKO, K., sud'ya vsesoyuznoy kategorii

Are one hundred and fifty participants too few for the all-Union
competitions? Radio no.12:11-12 D '62. (MIRA 16:3)
(Radio operators) (Amateur radio stations)

SOBIYEVA, O.B.; SHVETSOVA, V.P.; LUTSENKO, L.A.; SHVAL'BE, A.L.

Influence of infusions of red pepper and mustard on the reflex phase
of gastric secretion. Fiziol. zhur. 47 no.6:758-763 Je '61.

(MIRA 15:1)

1. From the Department of Physiology Paedagogical Institute, Riazan.
(STOMACH SECRETIONS) (CAPSICUM PHYSIOLOGICAL EFFECT)
(MUSTARD PHYSIOLOGICAL EFFECT)

NOVIKOV, B.P.; KHVALENSKAYA, O.B.; IUTSENKO, L.A.; KOCHEROV, I.V.

Experience in the control of erysipeloid in a meat combine. Zhur.
mikrobiol., epid. i immn. 41 no.12:110-112 D '64.

(MIRA 18:3)

1. Ivanovskaya oblastnaya sanitarno-epidemiologicheskaya stantsiya.

LUTSENKO, L.I.

Methodology of separate collection of saliva under the effect
of conditioned and unconditioned stimuli. Fiziol. zhur. [Ukr.]
11 no.6:836-838 N-D '65. (MIRA 19:1)

1. Kafedra normal'noy fiziologii Kiyevskogo meditsinskogo insti-
tuta im. akademika Bogomol'tsa.

LOSEV, I.P.; SMIRNOVA, O.V.; LUTSENKO, I.M.

Synthesis of isoalkyl esters of α -chloroacrylic acid. Trudy MKBTI
no.29:17-25 '59. (MIRA 13:11)

(Acrylic acid)

5(1,3)

AUTHORS:

SOV/153-2-4-23/32
Losev, I. P., Smirnova, O. V., Bodnar, E., Lutsenko, L. M.,
Konazhevskiy, A.

TITLE:

Synthesis of α -Chloroacrylic Acid Esters

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya
tekhnologiya, 1959, Vol 2, Nr 4, pp 589 - 593 (USSR)

ABSTRACT:

A report on this paper was given at the All-Union Conference on "Ways of Synthesis of Initial Products for the Production of High Polymers" which took place in Yaroslavl' from September 29 to October 2, 1958. Among the polymer synthetics, gaining more and more importance, the acryl derivatives are outstanding because of their many valuable properties. On the other hand, polymers obtained from the derivatives of acrylic and methacrylic acid esters show considerable shortcomings such as little resistivity to heat, wear, and crack formation. One of the ways of eliminating these shortcomings is polymer production on the basis of the esters mentioned in the title. Only α -substituted esters can be used (Refs 1,2). After giving a survey of publications (Refs 3-9), the authors state that the synthesis of the esters mentioned in the title in the presence of concentrated H_2SO_4 and

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Synthesis of α -Chloroacrylic Acid Esters

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alcohol is of high practical interest (because the initial substances triethylene chloride and formaldehyde are easy to obtain) (Refs 11,12). In the paper under review, publication data on the synthesis of methyl esters were taken into consideration, and the way of synthesis of other esters (ethyl, n.propyl-, isopropyl-, n.butyl-, isobutyl-, isoamyl-, and cyclohexyl-ester) were investigated. The synthesis of the acid mentioned in the title with an extended carbon chain has been little described in publications (Ref 4). Acrylic acid ester, acrylonitrile, and triethylene chloride were used as raw materials. Starting from the former, any esters can be synthesized in two stages: a) synthesis of the ester of α,β -dichloropropionic acid, b) dehydrochlorination of dichloro derivatives obtained from propionic acid by means of various separating agents. C o n c l u s i o n s : 1) In the chlorination of acrylic acid esters by means of gaseous chlorine in the presence of dimethyl formamide, corresponding esters of α,β -dichloropropionic acid are formed with a yield of more than 90% (of the theoretical yield). 2) α,β -dichloropropionitrile was formed by direct chlorination of acrylonitrile under the same conditions. This method of chlorination is new.

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Synthesis of α -Chloroacrylic Acid Esters

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3) Preparation of esters of the acid mentioned under 1) from the substance mentioned under 2) gives a yield of up to 75%, it is convenient, and interesting with regard to waste utilization of acrylonitrile production. 4) By means of chlorination, saponification, and esterification of acrylonitrile, various esters of dichloropropionic acid can be obtained in one process (yield up to 80%). 5) Sodium acetate proved to be the best separating agent in dehydrochlorination of the ester of α, β -dichloropropionic acid (yield of 80%). 6) Various esters can be obtained in the preparation of the esters of α -chloroacrylic acid from triethylene chloride and formaldehyde in the presence of the respective alcohol and H_2SO_4 . The ester yield decreases with increasing chain length of the alcohol radical. No esters are formed if isoamyl- and cyclohexyl alcohol are used. There are 2 figures, 1 table, and 12 references, 1 of which is Soviet.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskii institut imeni D. I. Mendeleeva (Moscow Institute of Chemical Technology imeni D. I. Mendeleev)

Card 3/3

LOSEV, I.P.; SHIN'OVA, O.V.; BOGOMOLOV, E.M.; LUTSENKO, L.I.;
KONRAKHENKO, A.S.

Polymerization of α -chloroacrylic acid esters. Izv.vys.ucheb.
zav.;khim.i khim.tekh. 4 no.3:471-476 '61. (HIRA 14:10)

1. Moskovskiy khimiko-tekhnologicheskii institut imeni
Mendeleyeva, kafedra tekhnologii vysokomolekulyarnykh
soyedineniy.

(Acrylic acid)

(Polymerization)

- 32002-65 EWT(m)/EPA(s)-2/EPT(c)/EWP(v)/ENG(v)/EPT(n)-2/T/EWP(j)/EPR/EPA(bb)-2/
EPA(h) Pc-4/Pe-5/Pr-4/Ps-4/Pe-10/Pu-4 MS: JAG/RM
ACCESSION NR: AP5007414 S/0286/65/000/004/0058/0058

AUTHOR: Kochnov, I. M.; Lutsenko, L. M.; Mirontseva, G. A.; Sapal'skaya, L. A.;
Didenko, L. F.

TITLE: A method for producing an epoxyfuran binder. Class 39, No. 168420

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 4, 1965, 58

TOPIC TAGS: epoxy resin, transparent plastic, bonding material

ABSTRACT: This Author's Certificate introduces a method for producing an amine-
reinforced epoxyfuran binder by combining epoxy and furan resins. By using resor-
cinofurfuroil resin as the furan resin, these binders may be used in the production
of transparent plastics with good mechanical properties and high thermal stability.

ASSOCIATION: none

SUBMITTED: 06Oct62

ENCL: 00

SUB CODE: MT

NO REF SOV: 000

OTHER: 000

Card 1/1

LUTSENKO, L. N., Cand Tech Sci -- (diss) "Synthesis and polymerization of isoalkylethers of alpha-chloracrylic acid and research into polymers obtained." Moscow, 1960. 15 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Moscow Order of Lenin Chemical Technology Inst im D. I. Mendeleyev); 190 copies; price not given; (KL, 21-60, 125)

POKOTILENKO, A.K., kand.med.nauk; LUTSENKO, M.A.

Morphology of the osseous capsule of the labyrinth in histological otosclerosis. Zhur. ush., nos. i gorl. bol. 23 no.4: 19-26 J1-Ag'63. (MIRA 16:10)

1. Iz Nauchno-issledovatel'skogo instituta otolaringologii Ministerstva zdravookhraneniya UkrSSR (direktor- zasluzhennyy deyatel' nauki prof. A.I. Kolomiychenko).
(LABYRINTH (EAR)) (OTOSCLEROSIS)

1. LUTSENKO, M. N.
2. USSR 600
4. Poultry
7. Development of poultry raising in the U.S.S.R., Ptitsevodstvo, No. 1, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.